

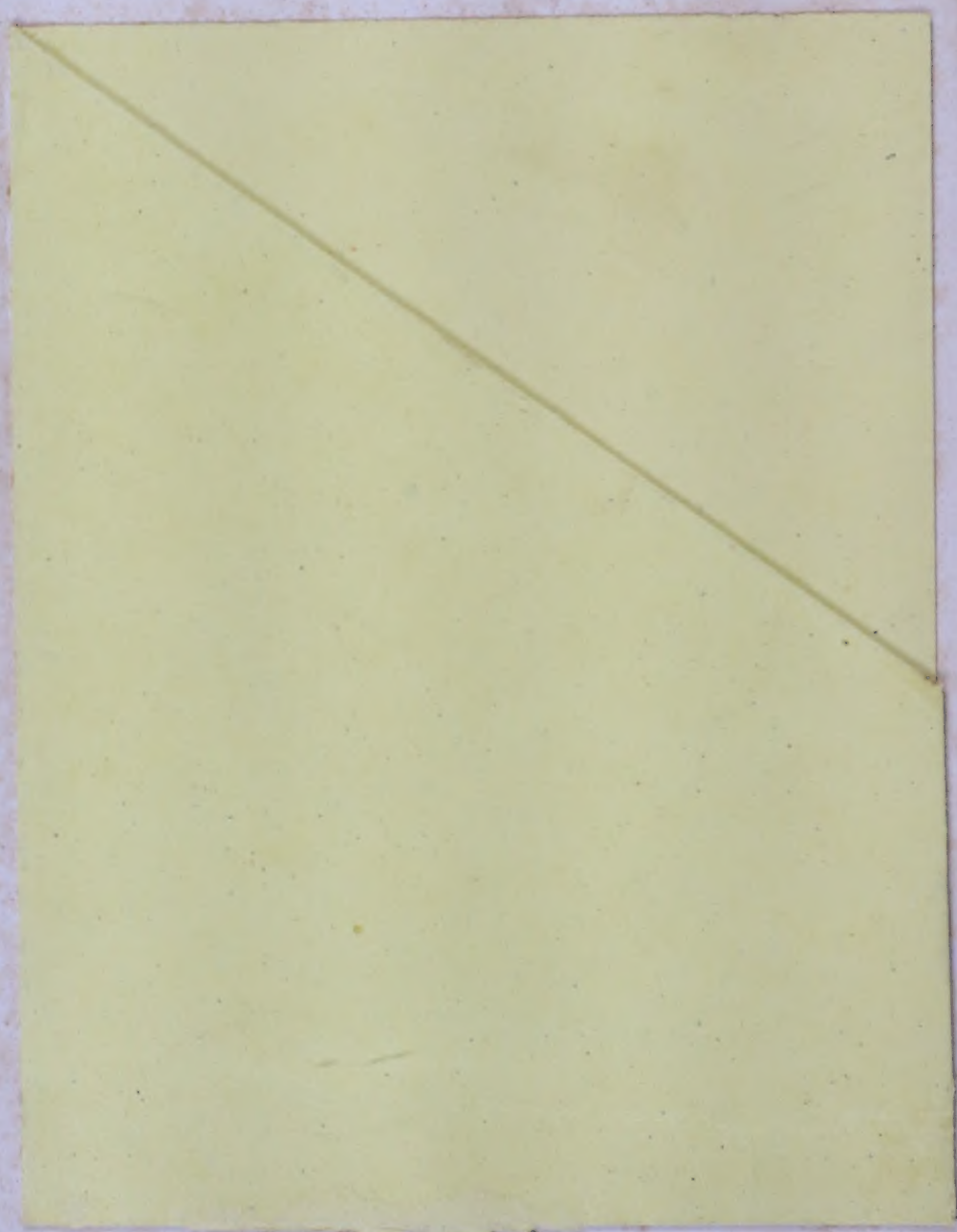
DRUGS BULLETIN

OCT. 1983 VOLUME SIX NUMBER FOUR

DRUGS FOR PRIMARY HEALTH CARE



DEPARTMENT OF PHARMACOLOGY
POSTGRADUATE INSTITUTE OF
MEDICAL EDUCATION AND RESEARCH
CHANDIGARH (INDIA)



— COMMUNITY HEALTH CELL

DRUGS BULLETIN

OCT. 1983 VOLUME SIX NUMBER FOUR

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POSTGRADUATE INSTITUTE OF
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DRUGS BULLETIN

OCT. 1983

VOLUME SIX

NUMBER SIX

C O N T E N T S

CORE LIST OF DRUGS	iii
DRUGS FOR PHC (LIST A & B)	viii
THERAPEUTIC INDEX	xi
ALPHABETICAL INDEX	xiii
DESCRIPTION OF DRUGS	1
COST OF DRUGS	74

Introductory Remarks

The International Conference on Primary Health Care held at Alma Ata, USSR from 6-12 September, 1978 was attended by a high powered delegation from India headed by the then Union Minister of State of Health and Family Welfare. We are thus committed to the Declaration of Alma Ata - to provide an accepted level of health to all by the year 2000 A. D. Provision of Essential Drugs forms an integral part of this programme.

The current issue of the Drugs Bulletin is based on the WHO EMRO documents EM/INC-MTG. ESS. DRG. PHC/4, 5 and 6 which I prepared as a WHO Consultant at Alexandria. These papers were presented at the "Intercountry meeting on Essential Drugs for Primary Health Care" at Amman, Jordan, September 25 - October 2, 1983. The meeting was attended by the representatives of 12 countries viz. Afghanistan, Bahrain, Cyprus, Democratic Yemen, Egypt, Jordan, Pakistan, Saudi Arabia, Somalia, Sudan, Syria and Yemen. The drugs included are only those which were approved at this meeting. Similarly the description of each drug was carefully examined, modified and finally approved by the group keeping in mind that

the drugs in most of the grass root level centres of the Third World countries are given by paramedical personnel. Two lists A and B have been approved. The first one is meant for those centres where the task is undertaken by persons educated upto Class VI while the list B is meant for those centres where better qualified persons who are educated upto Class X or more and trained for the job or nurses/dispensars are taking part in the drug delivery programme.

I would like to thank the Regional Director, East Mediterranean Office of WHO for having given me the opportunity to work at Alexandria, Egypt and prepare the documents for the WHO, EMRO Office

—V. S. Mathur

A Core List of Drugs for use at the Primary Health Care Level.

V. S. MATHUR

The world consumption of pharmaceutical products was estimated in the year 1981 to amount to Rs. 763 billions. Of this 75% was consumed by the industrialized nations and the remaining 25% was for three quarters of the world's population living in the Third World.

Perhaps we would get a much more realistic assessment of the prevailing drug situation if we consider the per capita expenditure on drugs each year. In the Third World this amount is not even Rupees 10 per person per year. In India too the figure is quite close to this. In contrast one of the countries of the industrialized world spends more than Rs. 900 per person per year on drugs alone.

What is indeed regrettable is that even the limited resources of the countries of the Third World are wasted in the purchase of non-essential drugs. The concern with the choice of drugs, their supply and their cost is not a new one for the developed countries but for the Third World it all started about 6 years ago when the WHO brought out its publication Selection of Essential Drugs (Technical Report Series No. 615, 1977) and highlighted at the Alma Ata meeting (6-12, September, 1978) where the strategy for "Health for All

by the year 2000 AD'' was announced by delegates from 134 governments and representatives of 67 United Nations Organizations.

Smt. Indira Gandhi, Prime Minister of India summarized the whole issue in her epoch making address at the opening of the 34th World Health Assembly, she stated :

''Affluent societies are spending vast sums of money understandably on the search for new products and processes to alleviate suffering and to prolong life. In the process, drug manufacture has become a powerful industry, subject to the same driving considerations of other big industries, that is, concentration on profit, fierce competition and recourse to hard-sell advertising. Medicines which may be of the utmost value to poorer countries can be bought by us only at exorbitant prices, since we are unable to have adequate independent bases of research and production. This apart, sometimes dangerous new drugs are tried out on populations of weaker countries although their use is prohibited within the countries of manufacture. It also happens that publicity makes us victims of habits and practices which are economically wasteful or wholly contrary to good health.....

My idea of a better ordered world is one in which medical discoveries would be free of patents and there would be no profiteering from life or death. The world community should also work out some form of recompense for the loss suffered by developing countries because of this migration of trained doctors and nurses.''

The Indian market is flooded with at least 25,000 formulations which are produced by 5156 drug manufacturing units. By the end of this year the drug production is expected to touch an all time high of

Rs. 1800 crores, yet only 20% of our bretheren have access to modern drugs. The rest 80% do not even get a tablet of Paracetamol from cradle to coffin. Can we afford to have the luxury of 25,000 formulations? More so when it is well-known that if 98% of these are thrown in the sea it would be better for mankind and worse for the fishes. Therefore, I firmly believe that if we want drugs for all the people, at all times, at prices which all can afford then we require a much shorter list which should be based on the recommendations of the WHO contained in the Technical Report Series Nos. 615, 641 and 685.

In my opinion the following should be the criteria for inclusion in the List of Drugs for Primary Health Care. It should be based on :

- (a) Prevalent disease pattern.
- (b) Educational background of Primary Health Care Worker.
- (c) Financial resources.
- (d) Existing facilities.
- (e) Include well tried drugs, by their generic names specially those where even the patent has expired.

Further for inclusion in the list of drugs the basis should be :

- (a) Proven efficacy.
- (b) Safety.
- (c) Cost of a course of therapy.
- (d) Easy compliance.

- (e) Practicability – which would include local availability at all times, suitable dosage forms which can be stored easily.

In such a list there is no place for “me too” and “latest” drugs where the efficacy and safety have yet to be established and the cost is exorbitant. Such a list should not include fixed dose irrational combinations or fancy drug cocktails containing a plethora of vitamins, energizers and minerals.

On the basis of what has been said before I believe that in the list of drugs for primary health care worker the following should be included :

A wide spectrum antimicrobial, analgesic antipyretic, an antihaemorrhoidal, a topical fungicide, a local disinfectant for boils and wounds, an antiallergic, an antimalarial, antidiarrhoeal, antianemia, a laxative, antiscabies and lice, rehydration salt, antispasmodic, Vit. A preparation, an antiasthmatic, and a drug for eye infections.

Two lists are therefore suggested for such workers. The first one (List A) which has 19 drugs is meant for those centres where the workers are educated upto class VI or slightly more and have been trained in the correct use of drugs. Such workers who are designated as Grade I workers should only have well tried and comparatively safer drugs which are meant for oral administration or local application. The second — List B is meant for Grade II workers who are at least matriculates (educated upto class X) or more and have received better training. This group would also

include nurses and dispensars. The List B has 31 drugs.

For Grade III workers i.e. qualified doctors a bigger list of about 75-100 drugs can be prepared. This should have more antimicrobials, drugs for immunization, for the treatment of leprosy, tuberculosis, malaria and diabetes, drugs for angina and hypertension, for epilepsy and psychiatric disorders, for minor surgical operations etc. The list can be prepared on the recommendation of W. H. O. in T.R.S 685.

List A and B are the minimal drugs which a Primary Health Care worker must have. Depending on the education and training of the personnel they can be given additional responsibilities, such as to carry out immunization, distribution of contraceptives, repeat prescriptions of drugs for leprosy and tuberculosis. □

DRUGS FOR PRIMARY HEALTH CARE

LIST 'A'

For those centres where the drugs would be given by Grade I Health Workers (educated upto class VI at least).

1. Acetylsalicylic Acid.
2. Aluminium hydroxide. (o)
3. Antihaemorrhoidal drug. (o)
4. Benzoic acid + Salicylic Acid.
5. Chlorhexidine.
6. Chlorpheniramine. (o)
7. Chloroquine.
8. Ferrous sulphate.
9. Gentian violet.
10. Ispagula husk/Senna.
11. Lindane/Benzyl benzoate.
12. Mebendazole/Piperazine.
13. Noscapine.
14. Oral rehydration salts.
15. Paracetamol.
16. Retinol.
17. Salbutamol/Aminophylline.
18. Sulphadimidine (o)
19. Tetracycline eye ointment.

Drugs followed by a round symbol (o) are examples of a therapeutic group, select any member based on availability and comparative cost.

LIST 'B'

For those centres where the drugs would be administered by Grade II workers (educated upto class X or more and are adequately trained).

1. Acetylsalicylic acid.
2. *Activated charcoal.*
3. *Adrenaline injection.*
4. Aluminium hydroxide (o)
5. *Ampicillin. (*)*
6. Antihaemorrhoidal drug (o)
7. Benzoic acid + Salicylic acid.
8. *Calamine lotion*
9. Chlorhexidine.
10. Chlorpheniramine (o)
11. Chloroquine.
12. *Ergometrine.*
13. Ferrous sulphate.
14. Gentian violet.
15. *Iodine.*
16. *Ipecacuanha.*
17. Ispagula husk/Senna.
18. Lindane/Benzyl benzoate.
19. Mebendazole/Piperazine.
20. *Metronidazole.*
21. Noscapine.
22. Oral rehydration salt.
23. *Oxyphenonium bromide (o)*
24. Paracetamol.

25. *Penicillin*—Pen. V. and Procaine Penicillin injection.
26. *Promethazine*.
27. Retinol.
28. Salbutamol/Theophylline.
29. Sulphadimidine (o)
30. Tetracycline eye ointment.
31. *Trimethoprim*.

Drugs followed by a round symbol (o) are examples of a therapeutic group, select any member based on availability and comparative cost.

An asterik (*) Ampicillin is a safe and useful drug but can cause hypersensitivity reactions, avoid its use in subjects giving history of reaction to the penicillin group.

Drugs in italics are the new ones added to list A.

THERAPEUTIC INDEX

INDICATION-SYMPTOM/ DISEASE.	DRUG	PAGE NO.
Allergy		
(a) Hayfever, Urticaria	Chlorpheniramine	1
(b) Severe life threatening	Adrenaline	3
Amoebiasis	Metronidazole	5
Anaemia	Ferrous Sulphate	7
Anal Fissure	Ispagula husk	9
Asthma	Aminophylline	11
	Salbutamol	13
Constipation	Ispagula husk	9
	Senna	15
Cough	Noscapine	17
Dehydration	Rehydration Salts	19
Disinfection of skin;	Chlorhexidine	21
cut & wounds	Gentian violet	23
	Iodine	25
Eye infections	Tetracycline eye ointment	27
Fever	Acetylsalicylic acid	29
	Paracetamol	31
Fungal infection of skin	Benzoic + Salicylic acid	33
Giardiasis	Metronidazole	5
Gut cramps or Colicky Pain	Oxyphenonium	35
Haemorrhoids (Piles)	Antihaemorrhoid Suppo- sitory or cream	37
Indigestion, heartburn	Aluminium Hydroxide	39

Infection and fever	Ampicillin	41
	Penicillin	43
	Sulphadimidine	47
	Trimethoprim	49
Ingested poison	Activated Charcoal	51
Lice	Lindane	53
	Benzyl benzoate	55
Malaria	Chloroquine	57
Motion sickness	Promethazine	59
Night blindness, Xerosis	Retinol or Vit. A	61
Pain	Acetylsalicylic acid	29
	Paracetamol	31
Round and Pin Worm	Mebendazole	63
	Piperazine	65
Scabies	Benzyl Benzoate	56
Soothing agent for skin	Calamine lotion	67
Stomach ulcers	Aluminium hydroxide	39
Swelling or inflammation	Acetylsalicylic acid	29
Uterine bleeding	Ergometrine	69
Vomiting	Promethazine	59
Vomiting induction	Ipecacuanha	71
Worm infestation	Mebendazole	63

ALPHABETICAL INDEX

	Page No.
Acetylsalicylic acid	... 29
Activated charcoal	... 51
Adrenaline	... 3
Aluminium Hydroxide	... 39
Aminophylline	... 11
Ampicillin	... 41
Antihaemorrhoidal drug	... 37
Benzoic acid+Salicylic acid	... 33
Calamine lotion	... 67
Chlorhexidine	... 21
Chlorpheniramine	... 1
Chloroquine	... 57
Ergometrine	... 69
Ferrous sulphate	... 7
Gentian violet	... 23
Iodine	... 25
Ipecacuanha	... 71
Ispagula husk	... 9
Lindane/Benzyl benzoate	... 53/55
Mebendazole/Piperazine	... 63/65
Metronidazole	... 5
Noscapine	... 17
Oral rehydration Salts	... 19
Oxyphenonium bromide	... 35
Paracetamol	... 31
Penicillin	... 43
Promethazine	... 59
Retinol	... 61
Salbutamol	... 13
Senna	... 15
Sulphadimidine	... 47
Tetracycline eye ointment	... 27
Trimethoprim	... 49

INDICATIONS

Allergy, Urticaria, Hayfever

NAME OF THE DRUG

Chlorpheniramine

DRUG SUMMARY

A prototype of antiallergic drug, calms and prevents allergic reactions such as itchy rashes or lumps on the skin, hives, hay fever. All antihistamine drugs have varying degree of sedation (sleepiness). Chlorpheniramine is a potent drug and has low sedation. Therefore recommended for day time use.

DOSAGE FORMS, STRENGTH

Tablet—4 mg

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 1 tablet

Children : Under 12 years $\frac{1}{2}$ tablet

Babies $\frac{1}{4}$ tablet

Directions . To be taken three times a day for 2-3 days.

CONTRAINDICATIONS

None worth mentioning

PRECAUTIONS

All antihistamines cause drowsiness and dulling of mental alertness so the user should not be entrusted to drive an automobile or work on machinery where loss of attention may lead to accident.

ADVERSE EFFECTS

May experience sedation, dizziness, fatigue, dry mouth and throat. Most of these disappear on continued use. Prolonged use can harm the blood cells.

INTERACTIONS

Enhances the sedative effect of drugs like diazepam, phenobarbitone and alcohol.

DIRECTIONS FOR STORAGE

Store in airtight containers, protect from light.

INDICATIONS

Severe Life Threatening Allergic Reaction

NAME OF THE DRUG

Adrenaline

DRUG SUMMARY

Adrenaline injection must be given at once if a person has severe reaction to drugs like penicillin. The drug should be injected subcutaneously. The drug dramatically reverses the fainting attack and breathing difficulty.

DOSAGE FORMS, STRENGTH

Ampoules 1 mg/ml

RECOMMENDED DOSAGE, DURATION AND DIRECTIONS

Adults	:	$\frac{1}{2}$ - 1 ml	Subcutaneously
Children	:	4 - 12 yrs	$\frac{1}{3}$ ml ,,
		1 - 6 yrs	$\frac{1}{4}$ ml
		Under 1 yr ~ DO NOT USE.	

Directions : If required a second dose can be given after $\frac{1}{2}$ hour. Do not give more than 3 doses. If the pulse goes up by 30 or more beat after the first injection ~ DO NOT REPEAT

CONTRAINDICATIONS

Non worth mentioning.

PRECAUTIONS

Do not give more than the recommended dose at a time. The injection should be subcutaneous.

ADVERSE EFFECTS

Overdosage may cause cardiac arrhythmias, cerebral haemorrhage and pulmonary oedema.

INTERACTIONS

Non worth recording.

DIRECTIONS FOR STORAGE

Store in airtight containers, protect from light. Do not use the ampoules if the solution is pink.

INDICATIONS

Amoebiasis & Giardiasis

NAME OF THE DRUG

Metronidazole

DRUG SUMMARY

The most significant advance in the treatment of amoebiasis has been the introduction of Metronidazole, a drug useful in ALL types of amoebiasis. The drug has a bitter, slightly saline taste. The benzoyl salt which is used for children is tasteless. Metronidazole is also used in Giardiasis, *Trichomonas vaginalis* and for infections due to anaerobic bacteria.

DOSAGE FORMS, STRENGTH

Tablet—200 mg/250 mg ; 400 mg

Syrup—10 mg/5 ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

For Amoebiasis

Adults : 750—800 mg)

Children : 8-12 yrs—400 mg) Three times a day
4-7 yrs—300 mg) for 10 days
2-3 yrs—200 mg)
Under 2 yrs—)
80-100 mg)

For Giardiasis

8—12 yrs 200 mg)

4— 7 yrs 200 mg) Three times a day

2— 3 yrs 100 mg) for 5 days

Under 2 yrs 50 mg)

Directions : Give a course ; repeat if required after
4—6 weeks.

CONTRAINDICATIONS

First trimester of pregnancy, nursing mothers ; persons with active brain disease ; those with blood disease.

PRECAUTIONS

Avoid alcoholic beverages during therapy with Metronidazole

ADVERSE EFFECTS

Frequently seen are nausea, headache, dry mouth, metallic taste. These rarely need interruption of therapy. Dizziness, vertigo, numbness and paresthesia may occur.

INTERACTIONS

Metronidazole interacts with alcohol and produces abdominal discomfort, vomiting, or headache. It enhances the anticoagulant effect of Warfarin.

DIRECTIONS FOR STORAGE

Keep in airtight containers, protect from light and moisture.

INDICATIONS

Anaemia--Iron deficient

NAME OF THE DRUG

Ferrous Sulphate

DRUG SUMMARY

The treatment of choice is orally administered Ferrous sulphate which is also the least expensive preparation. Dosage should always be calculated on the basis of elemental iron present (daily requirement in uncomplicated iron deficiency anaemia is 100 mg). Other salts such as Ferrous fumarate, gluconate, succinate and combination with Vit. C., succinic acid, copper and manganese do not offer any advantage except substantial increase in cost. Add Folic Acid—5 mg tablet/day in deficiency anaemia due to Folic Acid and Iron.

DOSAGE FORMS, STRENGTH

Tablets usually containing 200, 300, 325 mg salt (40, 60, 65 mg. iron) syrup 40 mg salt/ml (8 mg iron).

RECOMMENDED DOSAGE, DURATION AND DIRECTIONS

Adults :	Usual dose	
	2—3 mg./kg/day	... 400—600 mg/day

Children : Weighing 15-30 kg .)
 half adult dose)
 Smaller children and
 infants—5mg/kg ... 200 mg bd/day

Note that dosage should be calculated on basis of elemental iron.

Directions : To be taken after meals to reduce gastric upsets.

CONTRAINDICATIONS

In anaemias not due to iron deficiency.

PRECAUTIONS

Keep away from children. The sugar coated iron preparation is taken as candy. As little as 1 g can cause death.

ADVERSE EFFECTS

Gastric symptoms, heart burn, nausea, upper gastric discomfort, constipation—most are of psychic origin. These are not related to the salt used but to the content of elemental iron.

INTERACTIONS

Interact with tetracycline, reduce serum level of each. There is also reduced iron absorption with antacid. Space the dosage of the two drugs.

DIRECTIONS FOR STORAGE

In airtight containers, protect from light and moisture

INDICATIONS

Constipation, Haemorrhoids and Anal Fissure

NAME OF THE DRUG

Ispagula

DRUG SUMMARY

A mucilaginous substance obtained from plant source. Although pharmacologically inert, when taken orally absorbs water, increases the bulk which results in large, soft stools. Patients of haemorrhoids and anal fissure also get relief. A safe and effective remedy.

DOSAGE FORMS, STRENGTH

Husk, powder, sachets containing dry granules (6.4g).

RECOMMENDED DOSAGE, DURATION AND DIRECTIONS

Adults : Husk—3-5g) 2 teaspoonful once a day
Powder—3-15g)
Sachet—6.4g— one sachet

Children . 1 teaspoonful of husk or powder or $\frac{1}{2}$ sachet once a day.

Directions : Soak the dose in a cup of water, stir briskly and drink at once. Follow it up with a glass of water. Should be taken around 4 p.m, for action next morning.

CONTRAINDICATIONS

Nil

PRECAUTIONS

To be taken with plenty of water.

To be used with care in diabetic patients.

ADVERSE EFFECTS

Extremely rare, slight abdominal discomfort and flatulence.

INTERACTIONS

None worth Recording.

DIRECTIONS FOR STORAGE

In a cool place in airtight containers.

INDICATIONS

Bronchial Asthma

NAME OF THE DRUG

Aminophylline

DRUG SUMMARY

The most important action of aminophylline is its ability to relax the smooth muscle of bronchi which are constricted in asthma, thus relieving the difficulty in breathing. It is therefore a valuable drug in the treatment of bronchial asthma

DOSAGE FORMS, strength

Tablet 100 mg, 200 mg.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 200 mg. (2 tablet 100 mg each)
every 8 hours.

Children : 7-12 yrs ~ 100 mg 8 hourly
1-6 yrs ~ 50 mg 8 hourly
upto 1 yr ~ 12.5 ~ 25 mg 8 hourly

CONTRAINDICATIONS

Not to be used in individuals who are allergic to it,

PRECAUTIONS

Children are particularly susceptible to the drug Do not repeat more frequently than 8 hourly intervals

ADVERSE EFFECTS

May cause gastric irritation, nausea and vomiting.

INTERACTIONS

None worth recording.

DIRECTIONS FOR STORAGE

Store in well fitted air tight containers, protect from light.

INDICATIONS

Bronchial Asthma

NAME OF THE DRUG

Salbutamol

DRUG SUMMARY

Salbutamol gives relief to a patient of bronchial asthma by opening up the tubes leading to the lungs so that air can pass more easily. The advantage over Isoprenaline is that this drug has maximum effect on the bronchial tubes and minimal on heart. One should use the smallest dose giving relief.

DOSAGE FORMS, STRENGTH

Tablet 2—4 mg ; Syrup 2mg/5ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults . 2—4 mg ; 3 or 4 times a day, give the lower dose of 2 mg in elderly patients.

Children . Older children 2 mg, four times a day.
2—6 yrs—1-2 mg four times a day.

Directions . Use the smallest dose giving relief.

CONTRAINDICATIONS

High blood pressure, serious diseases of the heart, diabetes.

PRECAUTIONS

In asthmatic patients when condition worsens—
increase the dose (not exceeding 8 mg). Refer him to
the doctor who would add steroid or any other drug.

ADVERSE EFFECTS

Fine tremors of hand, palpitation, tension, headache
The patient should be warned about these.

INTERACTIONS

The effect is enhanced when aminophylline is given
simultaneously.

DIRECTIONS FOR STORAGE

Keep in airtight containers, protect from light.

INDICATIONS

Constipation

NAME OF THE DRUG

Senna

DRUG SUMMARY

A drug introduced in Arabian medicine in ninth century A. D. obtained from the pods and leaves of the plant *Cassia acutifolia* or *Cassia augustifolia*. The drug produces a single thorough evacuation of bowel after 6 hours and so should be given at bed time. The preparation from pods are more reliable and stable: One can use the active principles sennoside A and B or granules.

DOSAGE FORMS, STRENGTH

Senna tablets (Sennosides) 7.5 mg

Granule contain 6.5 mg. sennoside/1 g.-100 g. tins.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 2-3 tablets at bedtime to a maximum of 4 daily or 1-2 tsf. of granules at bedtime.

Children : 8-13 yrs. 1 tablet at bedtime or $\frac{1}{2}$ tsf. of granules

Directions : The patient should be advised to eat more green vegetables, fruit and cereals containing fibre and should drink enough water.

CONTRAINDICATIONS

Not to be used if the patient has severe stomach pain, nausea, vomiting or if he is dehydrated. Do not use in a child who is dehydrated or has high fever.

PRECAUTIONS

Do not allow the laxative use to become a habit. Advise on importance of diet, regular bowel habits and exercise.

ADVERSE EFFECTS

Mild gripping may occur.

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

In airtight containers; protect from light.

INDICATIONS

Dry Cough

NAME OF THE DRUG

Noscapine

DRUG SUMMARY

A naturally occurring alkaloid obtained from opium. A potent cough suppressant agent useful in the treatment of dry cough. Its mild respiratory stimulant and bronchodilator property are also helpful in the treatment of cough. Although obtained from opium it does not have any action on pain nor does it produce sedation. It does not produce euphoria nor its use leads to dependence.

DOSAGE FORMS, STRENGTH

Noscapine Hydrochloride or Noscapine tablet 15 mg. or as Noscapine linctus in combination with antihistamine.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 15-30 mg. three times a day.

Children . 7-12 yrs. ~ 7.5 - 15 mg. three times a day.
1-6 yrs. ~ 4.0 - 7.5 mg. three times a day.
below 1 yr. - 2 - 5 mg. three times a day.

CONTRAINDICATIONS

Nil.

PRECAUTIONS

Do not give more than 300 mg. drug in 24 hours.

ADVERSE EFFECTS

Slight drowsiness, dizziness, headache, nausea and rarely skin rash.

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

Store in air tight containers, protect from light, heat and moisture.

INDICATIONS

Dehydration

NAME OF THE DRUG

Rehydration salt

DRUG SUMMARY

Contains sodium chloride, sodium bicarbonate, potassium chloride, glucose and water. Sodium chloride is the principal salt involved in the maintenance of osmotic tension of blood and tissue. In cases of severe diarrhoea with or without vomiting the body loses more water and electrolytes than are taken. The patient of dehydration passes no or little urine of dark yellow colour, has sudden weight loss, dry mouth, weak pulse and may have convulsions. Small children and malnourished children develop dehydration more quickly.

DOSAGE FORMS, STRENGTH

In packets for making 1 litre. Smaller packets for 250 ml are also available.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 3 or more litres) Give the patient sips
Children : 1 litre in 8-24 hrs.) of this every 5
Infants : 1 litre in 24 hrs.) minutes

CONTRINDICATIONS

None worth recording.

PRECAUTIONS

Those who do not retain and vomit it out use intravenous solution. In well nourished children do not continue for more than 24 hrs ; can cause excessive levels of sodium and potassium in blood.

ADVERSE EFFECTS

None of importance

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

Store packets in a cool and dry place The prepared solution should not be stored for more than 24 hours

INDICATIONS

Disinfectant for superficial wounds and infection

NAME OF THE DRUG

Chlorhexidine

DRUG SUMMARY

Destroys the cell membrane of bacteria causing infection. Negligible amounts are absorbed from skin so no systemic toxicity. Used for the preoperative preparation of the doctor (handwash and scrub) and patient (skin). Useful in the treatment of superficial infections and wounds. Also used as a mouth wash for Aphthous ulcers and prevention of dental caries

DOSAGE FORMS, STRENGTH

Aqueous emulsion 4%. Aqueous solution 1% mostly as gluconate and sometimes as acetate

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

- Adults .
- 1) For preoperative disinfection of skin. 0.5% solution in 70% alcohol
 - 2) For wound disinfection 0.05% aqueous solution
 - 3) For catheter lubrication 0.05% sol. in glycerol
1% cream

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- | | |
|---------------------------------|---------------------|
| 4) Obstetrics | 0.02% sol. + Sodium |
| 5) For surgical ins-
trument | nitrate 1% |
| 6) Skin disinfection | 0.01% sol. |

CONTRAINDICATIONS

None worth recording

PRECAUTIONS

Bottles containing cork lining should not be used as cork inactivates it. If syringe and needle required for spinal injection, rinse it thoroughly with water for injection.

ADVERSE EFFECTS

Rarely skin sensitivity may occur.

INTERACTIONS

Incompatible with soaps and salts containing borates, bicarbonates, phosphate and sulphate.

DIRECTIONS FOR STORAGE

Store in a cool place in an airtight container, protect from light.

INDICATIONS

Local Antinfective

NAME OF THE DRUG

Gentian violet

DRUG SUMMARY

A dye, available as dark blue crystals. Solubility 1 in 200 in water, 1 in 30 in glycerol and very soluble in alcohol. The solution is used for the treatment of superficial skin infections, boils and sores with pus. It can also be used for treating thrush or yeast infection in mouth and vulva. Also applied on skin folds and burns.

DOSAGE FORMS, STRENGTH

Bottle—25g. , 0.5-2% solutions for local application

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Only for local application.

For mouth and vulva—0.5% aqueous solution

For skin 1-2% sol. in ethanol (10-20%).

Directions . Clean the part with soap and water. Paint it on the skin or in the mouth or vulva

CONTRAINDICATIONS

Should not be applied to the eye, ulcerative lesions of the face. May cause permanent pigmentation.

PRECAUTIONS

Washing the hands and bathing frequently with soap and water prevents many infections.

ADVERSE EFFECTS

Well tolerated drug. May cause ulceration of the mucous membrane.

INTERACTIONS

Antiseptic activity greatly reduced in presence of blood serum.

DIRECTIONS FOR STORAGE

Store crystals in an airtight bottle. Paint should be stored at a temperature not exceeding 25°C.

INDICATIONS

Disinfectant for wounds and abrasions

NAME OF THE DRUG

Iodine

DRUG SUMMARY

Iodine has a powerful bactericidal action and is used for disinfecting unbroken skin before operation, as first aid treatment of small wounds and abrasions. It is active against viruses and fungi. A solution in glycerol can be used as a throat paint.

DOSAGE FORMS, STRENGTH

- a) 2-2.5% solution in 75% acetone free industrial methylated spirit.
- b) 2% solution in glycerol for throat paint.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : To be applied on the affected part with a
& swab stick.

Children

Directions : For local application only.

CONTRAINDICATIONS

Nil

PRECAUTIONS

Do not cover the area where Iodine has been applied with occlusive dressings

ADVERSE EFFECTS

Stains the skin deep reddish brown which can be removed with weak solutions of alkali or sodium thiosulphate.

INTERACTIONS

When iodine combines chemically it is decolourized and the so-called colourless iodine preparations do not have disinfectant properties.

DIRECTIONS FOR STORAGE

Iodine crystals should be stored in glass stoppered bottles. Iodine solutions should be stored at a temperature not exceeding 35°C in airtight containers, protect from light.

INDICATIONS

Eye Infections—Trachoma

NAME OF THE DRUG

Tetracycline Eye Ointment

DRUG SUMMARY

Has a wide spectrum of activity including bacteria, rickettsia and Chlamydia (trachoma). A useful drug in the form of ointment or drops for eye infection of various kinds. The drug has been found to be useful in Afghanistan, Ethiopia, Iraq, Kuwait and Syria.

DOSAGE FORMS, STRENGTH

Eye Ointment 1%

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults	Put inside the eyelids three times a day for
&	5 days.
Children	

Directions : To be applied to both the eyes.

CONTRAINDICATIONS

Not to be given to patients who are hypersensitive to it.

PRECAUTIONS

Ensure that it is not applied on the outside of the eye lids

ADVERSE EFFECTS

Very rarely hypersensitive reaction—skin rash.

INTERACTIONS

Do not combine with Penicillin—antagonises Penicillin action.

DIRECTIONS FOR STORAGE

Store at temperature not exceeding 25°C

INDICATIONS

Pain, Fever, Inflammation

NAME OF THE DRUG

Aspirin (Acetyl Salicylic acid)

DRUG SUMMARY

Relieves headache, muscular and joint pains, lowers fever and reduces inflammation. Useful in bodyache, toothache, arthritis, tonsillitis, dysmenorrhea, pharyngitis, common cold, rheumatic fever and severe arthritis. When used injudiciously can damage stomach lining eventually resulting in ulcers.

DOSAGE FORMS, STRENGTH

Tablet—100-500 mg ; usually 300 mg.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults :	1-2 tablets))	4 times a day ; for
	(300-600 mg))	2-3 days. May require
			to be repeated.

Children :	8-12 yrs-1 tablet)	Double dose required
	(300 mg))	for severe arthritis.
	3-7 yrs- $\frac{1}{2}$ tablet)	
	(150 mg))	
	1-2 yrs- $\frac{1}{4}$ tablet)	
	(75 mg))	

Directions : Take aspirin with meals/milk or with plenty of water

CONTRAINDICATIONS

Patients having stomach ulcer/dyspepsia, hypersensitive individuals, patients having bleeding tendencies.

PRECAUTIONS

Not to be taken on empty stomach. Take history of drug allergy, if positive avoid aspirin, use Paracetamol. Keep beyond reach of children-large doses can poison them. Use with caution in children below 1 year.

ADVERSE EFFECTS

Dizziness, ringing in the ears, skin eruptions, epigastric distress, abdominal pain, gastric ulcers, increased bleeding tendency, hypersensitivity reactions.

INTERACTIONS

Enhances the activity of oral antidiabetic drugs and anticoagulants.

DIRECTIONS FOR STORAGE

Protect from moisture, excessive heat. Store in airtight containers.

Do not dispense when the tablet gives vinegar odour

INDICATIONS

Pain and Fever

NAME OF THE DRUG

Paracetamol (Acetaminophen)

DRUG SUMMARY

Equivalent to Aspirin in relieving pain and reducing fever. No anti-inflammatory action in doses used thus when inflammation is contributing to pain Aspirin is preferred. It does not cause stomach ulcer, allergy or bleeding tendency as with Aspirin. Safer for children.

DOSAGE FORMS, STRENGTH

Tablet—100-500 mg ; Elixir/Syrup 120-125 mg/ml.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults .	1 tablet (500 mg))	
Children :	8-12 yrs-1 tab)	
	(500 mg))	
	3-7 yrs- $\frac{1}{2}$ tab.)	4 times a day for
	(250 mg))	2-3 days
	6 months-2 yrs-5ml)	
	(125 mg))	
	Less than 6 months)	
	2.5 ml. (62.5 mg.))	

Directions : To be taken before meals or 2 hours after meals.

CONTRAINDICATIONS

Patients with severe liver and kidney damage.

PRECAUTIONS

Children below 8 yrs should not be given more than 1.2 g/day and older children and adults 5-10 g/day (25 g is fatal).

The drug should not be continued for more than 7 days as it may be toxic.

ADVERSE EFFECTS

Rarely skin rash. Larger doses-10 g can be hepatotoxic.

Heavy smokers /alcoholics are more susceptible to adverse effects.

INTERACTIONS

Concurrent use of alcohol or heavy smoking may increase toxicity.

DIRECTIONS FOR STORAGE

Keep in well-closed containers, protect from light

INDICATIONS

Ring worm and other fungal infections of skin.

NAME OF THE DRUG

Benzoic acid + Salicylic acid (Whitfield's Ointment).

DRUG SUMMARY

The drug stops the growth of the fungus and removes the superficial portion of the skin containing the fungus. The ointment can easily be made by taking 3 and 6 parts respectively of Salicylic and Benzoic acid and 91 parts of Vaseline.

DOSAGE FORMS, STRENGTH

Salicylic acid in fine powder 30 g. Emulsifying ointment 910g. Benzoic acid in fine powder 60g.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : For local application. Treatment may be
& required for several weeks/months.

Children

Directions : Wash the area with soap and water, dry,
apply ointment 3 or 4 times a day.

CONTRAINDICATIONS

None worth recording.

PRECAUTIONS

Bathing and care of personal hygiene would help in bringing quicker relief.

ADVERSE EFFECTS

Rarely mild redness at the site of application. No cause for alarm.

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

Store at temperature not exceeding 25° C:

INDICATIONS

Gut cramps or colicky pain.

NAME OF THE DRUG

Oxyphenonium Bromide.

DRUG SUMMARY

An atropine like drug which relieves cramps or spasms of the smooth muscles such as stomach, intestine and ureter. It also reduces the secretions. It is now used as an adjunct in the treatment of stomach and intestinal ulcers and in renal colic.

DOSAGE FORMS, STRENGTH

Tablet—5 mg ; Drops 10 mg/ml.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 5—10 mg. Four times a day for 2-3 days.

Children : 7—12 yrs—8-15 drops) 3 times a day
2— 6 yrs—5- 8 drops) for 2-3 days

CONTRAINDICATIONS

Patients with enlarged prostate, glaucoma.

PRECAUTIONS

Do not use in children, if they have high fever. Do not use in children below 2 years.

ADVERSE EFFECTS

Dryness of the mouth, thirst, flushing and dryness of skin, desire to urinate with inability to do so, constipation, dilatation of pupil

INTERACTIONS

The action is enhanced by concomitant use of antihistamine, imipramine and phenothiazides.

DIRECTIONS FOR STORAGE

Store in airtight containers, protect from light

INDICATIONS

Piles (Haemorrhoids)

NAME OF THE DRUG

Antihaemorrhoidal Suppository or ointment

DRUG SUMMARY

These are usually a combination of a local anaesthetic e.g. Lignocaine + anti-inflammatory agent e.g. cortisone and an astringent agent e.g. Chlorhexidine. Many germicidal protein precipitating agents act as astringents in high dilution. These remedies make haemorrhoids smaller and less painful.

DOSAGE FORMS, STRENGTH

Suppositories, ointment.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

- Adults . (1) Apply small amount of ointment 2-3 times a day preferably before and after each bowel movement and at bed time.
- (2) Put the suppository up the anus after the daily bowel movement, and another on going to bed.

CONTRAINDICATIONS

None worth recording.

PRECAUTIONS

In cases of local infection treat it with appropriate antibiotic. Use of Ispagul husk would also relieve pain by making the stool soft.

ADVERSE EFFECTS

Persons hypersensitive to any of the three ingredients may have allergic reactions.

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

Suppositories should be kept in a well closed container at a temperature not exceeding 25° C.

INDICATIONS

Indigestion, heart burn and stomach ulcers

NAME OF THE DRUG

Aluminium Hydroxide

DRUG SUMMARY

The drug gives relief by neutralizing the acid of the stomach. It is mostly marketed with other agents specially magnesium hydroxide. The combinations increase efficacy, prolongs duration and reduces side effects. Liquid preparations are more effective.

DOSAGE FORMS, STRENGTH

Tablet—500 mg.

Oral suspension 320 mg/5 ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults . 1 tablet (500 mg) to be chewed or sucked 3-4 times a day. Treatment required for long time. Prescribe for 5 days and then consult doctor for further use.

Directions . For acid indigestion and heart burn chew 1-2 tab. when required. For ulcers take it one hour after meals and at bed time.

CONTRAINDICATIONS

Not to be used indiscriminately for every little belch or upper gastro-intestinal upset. These are much abused groups of drugs.

PRECAUTIONS

Avoid indiscriminate use with other drugs like digoxin diazepam, tetracyclines and sulphonamides.

ADVERSE EFFECTS

Tends to constipate if used alone. Prolonged indiscriminate use may lead to osteomalacia and kidney stones.

INTERACTIONS

It decreases the absorption of a number of drugs like sulphonamide and diazepam.

DIRECTIONS FOR STORAGE

Store at room temperature preferably below 25°C. Keep in airtight containers.

INDICATIONS

Wide spectrum Antibiotic

NAME OF THE DRUG

Ampicillin

DRUG SUMMARY

A drug which acts and destroys several varieties of bacteria. It is safer than other broad spectrum antibiotics and is specially useful for babies and small children and pregnant women. Useful in septicaemia and un-explained illness of newborn, ear infections, upper respiratory infection, typhoid fever specially carriers, meningitis, gall bladder infection, soft tissue infections and gonorrhoea.

DOSAGE FORMS, STRENGTH

Capsule—250-500mg ; Oral suspension 125-250 mg/5 ml , Paediatric drops 100 mg/ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 2 Capsule (500 mg))

Children : 8-12 yrs 1 capsule)

or 2 tsf (250 mg)) Four times a day

3-7 yrs) for 5 days (Continue

1 tsf (125 mg)) for 2 days after

Under 3 yrs &) fever and symptoms

new born : $\frac{1}{2}$ tsf) disappear

(62 mg))

Directions : Reduce dose in renal disease.

CONTRAINDICATIONS

Patients allergic to any member of the Penicillin and Cephalosporin series.

PRECAUTIONS

Record history of previous consumption and allergy. Anaphylaxis extremely rare. Adrenaline is the antidote.

ADVERSE EFFECTS

Skin rash and very rarely blood dyscrasias. Anaphylactic shock is possible though not more than 12 cases are recorded in world literature

INTERACTIONS

Increased possibility of skin rashes in subjects on Allopurinol.

Diminishes the effect of oral contraceptives.

DIRECTIONS FOR STORAGE

Store in airtight containers at a temperature not more than 30°C

INDICATIONS

Bacterial Infection

NAME OF THE DRUG

Penicillin

DRUG SUMMARY

Penicillin is the drug of choice for wound infection, abscesses, boils, diphtheria, tonsillitis, gangrene, tetanus, pneumonia, rheumatic fever, bronchitis, meningitis, ear infection, infected tooth, infected bones, gonorrhoea, syphilis. Procaine Penicillin G is an intermediate acting preparation and Phenoxymethyl Penicillin (Pen V) is orally effective. The former is meant for moderate to severe infection and the latter for mild to moderate infections.

DOSAGE FORMS, STRENGTH

Procaine Penicillin G. 300 000—600 000 U/ml.

Phenoxymethyl Penicillin (Pen V) Tablet 125—250 mg.
Suspension 125 or 250 mg./5 ml.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults & : See Annexure.

Children

Directions : Must record history of previous exposure; should perform the skin sensitivity test before administration; must keep the patient under observation for 30 minutes. Keep Adrenaline handy.

CONTRAINDICATIONS

Patients allergic to Penicillin or any other member of the series like Ampicillin, Amoxycillin, Carbenicillin, Cloxacillin and Cephalosporins.

PRECAUTIONS

Take history of previous exposure and drug allergy. Perform skin test. Always have Adrenaline 1 in 1000 available. In case of Anaphylactic shock inject 0.5 ml subcutaneously in adults and 0.3 ml in children .

ADVERSE EFFECTS

For most of the people one of the safest medicines. Allergic reaction can be mild which manifests itself several days after as rash. Rarely anaphylactic shock in which patient becomes pale, has difficulty in breathing and goes in shock and collapse. Adrenaline to be injected at once.

INTERACTIONS

Penicillin and Gentamicin should not be mixed in the same bottle. Penicillin inactivates Gentamicin

DIRECTIONS FOR STORAGE

Penicillin G should be stored in well closed container at a temperature of not more than 30°C. Oral Penicillin should be kept in a well closed container

ANNEXURE

RECOMMENDED DOSAGE, DURATION AND DIRECTIONS

FOR MILD TO MODERATE INFECTION-PENICILLIN V ORALLY

Adults 2 tab (250 mg)) Four times a day
 Children 6-12 yrs. 1 tab (125 mg) ;) for 5—7 days.
 1 t.s.f.) (Continue for 2
 under 6 yrs $\frac{1}{2}$ tab (65 mg) ;) days after symp-
 $\frac{1}{2}$ t. s. f) toms and fever
) cured).

For more serious infection double the dose.

FOR MODERATE TO SEVERE INFECTION—PROCAINE PENICILLIN G INJECTION

Adults 300 000—600 000 U
 Children 8-12 yrs 300 000 U) Once a day for 5 days.
 3-7 yrs 150 000 U) (Continue for 2 days
 under 3 yrs 75 000 U) after the symptoms
) and fever disappear).

Do not use in newborn babies.

Ampicillin is preferred.

NOTE :—Add water for injection in the vial, shake it well before injecting.

FOR GONORRHOEA

Procaine Penicillin G—24,00,000 U inject half the amount in each buttock.

FOR SYPHILIS

Procaine Penicillin G—inj. 600 000 U once a day for 8—10 days.

SENSITIVITY TEST

Clean the skin of the inner side of the forearm with soap and water or alcohol, let it dry. Take 0.1 ml. (1000 U) of the drug in a syringe with a small needle. Hold the syringe flat against the skin, inject the drug just into the skin so that a raised area the size of pea is formed ; remove the needle.

Watch for 30 minutes for red, painful swelling at the site, rash on the body, itching, swelling, difficulty in breathing, weak rapid pulse, cool gray skin and collapse. If none of these occur, it is safe to give Penicillin BUT ALWAYS KEEP ADRENALINE READY.

INDICATIONS

Common Infections

NAME OF THE DRUG

Sulphadimidine

DRUG SUMMARY

Though effective on several types of bacteria, they are weaker than many currently available antimicrobials. As the drug is effective orally, travels to various body fluids and brain, is inexpensive it is felt that at least for some conditions like genitourinary, skin and ear infections this should be the first line drug, in fact can be tried for all infections. Sulphadimidine is well absorbed and rapidly excreted drug which does not form crystals in urine.

DOSAGE FORMS, STRENGTH

Tablet 0.5 g ; Mixture 500 mg/5 ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults :	6 tab: first dose. then 2 tab.)	
	6 hourly)	
Children :	8-12 yrs 4 tab. first dose, then)	For 5
	2 tab. 6 hourly)	days
	4-8 yrs 1½ tab. 6 hourly)	
	2-4 yrs 1 tab. 6 hourly)	
	3m-2 yrs ½ tab. 6 hourly)	

Directions Drink lots of water with the drug,

CONTRAINDICATIONS

Not to be used in infants upto 3 months. Should not be given to pregnant women in the last month of pregnancy or to nursing mothers. Do not give to dehydrated individuals.

PRECAUTIONS

Discontinue treatment at once if a rash appears, there is itching, joint pain, fever, lower body pain or blood in urine. Drink lots of water. Not to be applied topically (on skin).

ADVERSE EFFECTS

Transient like malaise, headache, nausea, vomiting. Serious ones are allergic reactions, skin rash, hepatitis, drug fever agranulocytosis, aplastic anaemia, joint pain, haemolysis specially in G 6 PD deficient persons.

INTERACTIONS

Increase the effect of oral anticoagulants, oral antidiabetic, thiazide diuretic. Drugs like salicylates and indomethacin, can increase the effect of sulphonamide.

DIRECTIONS FOR STORAGE

Store in airtight containers, protect from light.

INDICATIONS

Urinary Tract Infection

NAME OF THE DRUG

Trimethoprim

DRUG SUMMARY

A drug related to the antimalarial Pyremethamine. Trimethoprim has been extensively used in combination with the sulphonamide as cotrimoxazole (Septran). The drug is readily absorbed from Gastro-intestinal tract and widely distributed in the body, especially in kidneys and also in the brain

DOSAGE FORMS, STRENGTH

Tablet 100 mg.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults ; 200 mg. (2 tablets) twice a day
 7-12 yrs 100 mg (1 tablet))
 twice a day)

Children : 4-6 yrs 50 mg ($\frac{1}{2}$ tablet)) for 5 days
 twice a day)
 3m-3 yrs 25 mg ($\frac{1}{4}$ tablet))
 twice day.)

Directions : Do not continue the drug for more than 5 days.

CONTRAINDICATIONS

Pregnant and nursing mothers, infants below 3 months and patients with severe damage or macrocytic anaemia.

PRECAUTIONS

Check blood film, discontinue therapy if any evidence of macrocytic anaemia. The antidote for bone marrow depression is calcium folinate.

ADVERSE EFFECTS

None worth mentioning.

INTERACTIONS

Nil

DIRECTIONS FOR STORAGE

Storage below 30°C, protect from light and keep in airtight containers

INDICATIONS

For swallowed poisons

NAME OF THE DRUG

Activated charcoal

DRUG SUMMARY

An odourless, tasteless fine black powder which has broad spectrum absorptive properties for orally ingested drugs—a most valuable single agent for the emergency treatment of poisoning with drugs like aspirin, barbiturates, chlorpheniramine, chloroquine and quinine. Acts only on unabsorbed drug and that which comes again in bile. Not of use in poisoning with strong acids, alkalis and iron

DOSAGE FORMS, STRENGTH

Powder

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Prepare by dissolving 2 tablespoonful (50g) in a glass of water (400 ml).

Use 5 ml/kg of the above either orally or by the gastric tube.

Repeat at 20 minutes interval till 50g or 1 glass is taken.

Directions : Should be followed by stomach lavage after some time.

CONTRAINDICATIONS

Nil

PRECAUTIONS

Should not be given simultaneously with an emetic such as Ipecac.

ADVERSE EFFECTS

Non-toxic when given by mouth, regular use may alter the normal gastrointestinal absorption pattern.

INTERACTIONS

Chemically acts by resorption of unabsorbed orally ingested or recycled drug in the bile. Drug does not appear to desorb from this combination.

DIRECTIONS FOR STORAGE

Store in airtight containers:

INDICATIONS

For Lice

NAME OF THE DRUG

Lindane

DRUG SUMMARY

Lindane or Gamma Benzene Hexachloride is a useful drug for Scabies and Lice. For the latter a water solution 0.1-0.2% can be used. The mixture is applied as a thin layer over the entire cutaneous surface for 24 hours. Usually a single application works. If repetition required do so after 8 days. The compound is readily absorbed through skin and in cases where skin is excoriated use weaker solution. Benzyl benzoate is preferred for scabies. Lindane to be used for lice only.

DOSAGE FORMS, STRENGTH

Lotion cream 1% or less

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : Use 0.2-1% lotion or cream.

Children : Better be avoided in children.

Directions : For lice 0.1-0. 2% lotion or cream.
If required repeat after 8 days.

CONTRAINDICATIONS

Avoid use in pregnant women, infants and children.
Use Benzyl Benzoate.

PRECAUTIONS

Not to apply after hot soapy bath as this increases the absorption from the skin. Keep the drug away from face, eye as it is irritant.

ADVERSE EFFECTS

Even when applied locally can cause convulsions in children.

INTERACTIONS

It stimulates liver enzymes. Children are considered to be particularly at risk.

DIRECTIONS FOR STORAGE

Protect from light.

INDICATIONS

For Scabies & Lice

NAME OF THE DRUG

Benzyl Benzoate

DRUG SUMMARY

Is a relatively harmless substance when compared with Lindane. The drug has been widely employed in the treatment of scabies and lice. The lotion is applied to the entire body except the face. When the first application is dry, a second is applied. After 24 hours, another application is made. Alternatively 3 applications may be made at 12 hourly intervals, Clothing and bedding should be changed to prevent reinfestation.

DOSAGE FORMS, STRENGTH

Benzyl benzoate 25% lotion.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : For local application

Children : Safe for children

Directions : The patient should be scrubbed with soap in a hot bath to open up the burrows and immediately after drying Benzyl benzoate is applied over the whole body surface from the neck down, a second application is made on the following day.

CONTRAINDICATIONS

None worth recording.

PRECAUTIONS

Benzyl benzoate should not be allowed to come in contact with eye.

Clothing and bedding should be changed to prevent reinfection:

ADVERSE EFFECTS

Irritant to the eye and skin.

Hypersensitivity reactions have been reported

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

Store at temperatures not exceeding 40°C in well-filled airtight container, protect from light.

INDICATIONS

Malaria

NAME OF THE DRUG

Chloroquine

DRUG SUMMARY

A good drug for malaria, readily absorbed from the gut and concentrated several fold in the liver, spleen and kidney. Cures *P. falciparum* (M.T.) and suppresses *P. vivax* (B. T.) malaria. Also useful in the treatment of extra-intestinal amoebiasis. Has anti-inflammatory property, can be safely used in pregnant women.

DOSAGE FORMS, STRENGTH

Tablet 250 mg (150 mg base). Syrup 160 mg (100 mg base/10 ml) 1 t s. f. = 5 ml = 50 mg = 1/3 tab.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : See Annexure for the treatment of
Children : Acute Attack and for Chemoprophylaxis.

CONTRAINDICATIONS

Not to be used in presence of severe gastrointestinal, neurological or blood disorders.

PRECAUTIONS

Preferably not to be taken on empty stomach. Use with caution in presence of hepatic disease. Ophthalmological checks are necessary if used for prolonged periods.

ADVERSE EFFECTS

Generally well tolerated ; may cause transient headache, visual disturbance, gastric upsets, pruritus, which disappear on discontinuation of the drug.

INTERACTIONS

Concomitant use with Phenylbutazone may precipitate dermatitis.

DIRECTIONS FOR STORAGE

Protect from light and moisture

ANNEXURE

RECOMMENDED DOSAGE, DURATION AND DIRECTIONS
FOR ACUTE ATTACK

	Immedi- ately	After 6 hrs	2nd day	3rd day	Total
Adults	4 tab	2	2	2	=10
Children 9—12 yrs	3	1½	1½	1½	=7½
6—8 yrs	2	1	1	1	=5
2—5 yrs	4 tsf	2	2	2	=10
12—23 m	3	1½	1½	1½	=7½
9—12 m	2	1	1	1	=5
below 8m	1	½	½	½	=2½

FOR CHEMOPROPHYLAISIS (GIVE EACH WEEK)

Adult	2 tablets
Children 9—12 yrs	1½ „
6—8 yrs	1 „
2—5 yrs	2 tsf.
12—23 m	1½ tsf.
9—12 m	1 tsf.
below 8m	½ tsf.

NOTE . 1 tsf. = 5 ml = 50 mg = 1/3 tab

PRECAUTIONS

Causes drowsiness and dulling of mental alertness. Patients on this drug should not drive vehicles or work on machinery where loss of attention may lead to accidents.

ADVERSE EFFECTS

Slight alterations in blood pressure, skin reaction and rarely fits in children can occur besides sedation which is marked with this drug.

INTERACTIONS

Alcohol, barbiturates, diazepam can increase the sedative effect of Promethazine

DIRECTIONS FOR STORAGE

Store in airtight containers. Protect from light.

INDICATIONS

For Nightblindness & Xerosis

NAME OF THE DRUG

Retinol

DRUG SUMMARY

Retinol or Vitamin A is present in spinach, carrots, butter, cream, egg yolk, milk, nuts and fruits. It is light yellow or red oil which has a mild fishy odour. Vitamin A is essential for the formation of visual pigments necessary for vision in dim light. It is also required for keeping the skin and mucus membrane moist. Vitamin A deficiency is linked with Protein Calorie Malnutrition and such persons are more prone to infection.

DOSAGE FORMS, STRENGTH

Capsule or tablet 7.5 mg. (25 000 I.U.) ,

60.0 mg. (200 000 I.U.)

Oily sol. 15 mg/ml. 50 000 I.U.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Children : Give one capsule (200 000 I.U.) by mouth.
The eyes should become normal within a week. If observe no change repeat the dose.

Directions : In areas where the deficiency is endemic repeat a capsule every 3—6 month. The patients should be advised to consume carrots, butter; egg, milk, nuts and fruits.

CONTRAINDICATIONS

Too much vitamin A can cause fits.

PRECAUTIONS

Avoid the drug in excess and keep it out of reach of children.

ADVERSE EFFECTS

Excessive amounts would result in hypervitaminosis A. This only occurs when the drug is taken for very long periods.

INTERACTIONS

None worth recording.

DIRECTIONS FOR STORAGE

Store in a cool dry place.

INDICATIONS

For all types of Worms

NAME OF THE DRUG

Mebendazole

DRUG SUMMARY

A versatile drug effective against round worm, pin worm, whip worm, tape worm and even guinea worm. Works well for mixed infection. The drug paralyses the worm in the hosts gut and kills it slowly. Most of the drug remains in the gut and only a small portion is excreted in urine. Also useful in hydatid disease.

DOSAGE FORMS, STRENGTH

Tablet—100 mg. Suspension 100 mg/5 ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults	1 tablet (100 mg) or 1 teaspoonful (5 ml)
&	morning and evening for 3 consecutive
Children	days for all worms except pin worm
	(Oxyuris). For this single dose 1 tab. or
	1 t. s. f. second dose may be given after
	14 days

Directions . Does not require any preparation or purgation. The patient should observe the stools for expelled worms.

CONTRAINDICATIONS

Pregnant women and children below 2 years.
Patients who have experienced allergic reactions to it.

PRECAUTIONS

Medicines by themselves are not enough to get rid of worms for very long. Personal and public cleanliness are necessary. When a person in the family suffers treat the whole family.

ADVERSE EFFECTS

Transient symptoms of diarrhoea and abdominal pain may occur.

INTERACTIONS

Nil.

DIRECTIONS FOR STORAGE

Keep in airtight containers, Protect from light and moisture.

INDICATIONS

Round and Pin Worms

NAME OF THE DRUG

Piperazine

DRUG SUMMARY

Available as citrate, tartarate, hydrate, adipate or phosphate salt. The worm is paralysed by the drug in the hosts gut and is expelled by the gut movement. Though effective in gut lumen it is absorbed from the gut wall and excreted in the urine.

DOSAGE FORMS, STRENGTH

Tablet—500 mg ; Syrup 100 mg/ml

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

For round worms (Ascaris)

Adults : 6 tab (3g) once a day

Children . 8—12 yrs—4 tab once a day

3— 7 yrs—2 tab once a day

1— 3 yrs—1 tab once a day

Under 1 yr— $\frac{1}{2}$ tab once a day

For Pin worm (Oxyuris)

5 tab (2.5 g) once a day

8—12 yrs— $1\frac{1}{2}$ tab once a day

3— 7 yrs—1 tab. once a day

under 3 yrs— $\frac{1}{2}$ tab. once a day

Directions : Treatment for round worms is for 2 days,
and everyday for 1 week for pin worm.

CONTRAINDICATIONS

In patients having epilepsy, liver disease, renal or neurological disorders.

PRECAUTIONS

Medicines by themselves are not enough. Give due attention to personal and public cleanliness. Drinking water and raw vegetables should be specially treated to remove contamination.

ADVERSE EFFECTS

Serious ones are rare, may cause nausea, headache, abdominal discomfort. May cause severe neurotoxicity specially in epileptic patients

INTERACTIONS

Can increase the action of Chlorpromazine.

DIRECTIONS FOR STORAGE

In airtight containers, protect from light

INDICATIONS

Dermatological Soothing Agent

NAME OF THE DRUG

Calamine Lotion

DRUG SUMMARY

Useful agent for local applications on the skin for a wide variety of disorders including pruritus, erythema or redness and swelling, urticaria eczema, photosensitivity, impetigo. Basically it is Zinc carbonate coloured with Ferric oxide. It has mild astringent, antiperspirant and mild antiseptic properties. The net result is a protective and soothing effect.

DOSAGE FORMS, STRENGTH

Calamine Lotion U.S.P

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults & Children	Composition : Calamine U.S.P.	8g
	Zinc Oxide	8g
	Glycerol	2 ml
	Bentonite magma	25 ml
	Calcium hydroxide topical olution	100 ml

Directions . FOR EXTERNAL USE ONLY For local application without rubbing.

CONTRAINDICATIONS

None worth recording.

PRECAUTIONS

To be applied on unbroken skin without rubbing

ADVERSE EFFECTS

Nil.

INTERACTIONS

Nil

DIRECTIONS FOR STORAGE

Store in airtight containers.

INDICATIONS

Severe Uterine bleeding

NAME OF THE DRUG

Ergometrine

DRUG SUMMARY

Ergometrine is obtained from ergot, a fungus that grows on infected rye and other grains. It produces characteristic uterine contractions which are forceful and prolonged and the resting tonus is markedly increased. This effect can therefore be made use of in contracting the uterus after birth of the baby and the placenta. This action is not suited for inducing labour but can be used for the symptomatic relief of severe uterine bleeding (more than 2 cups) The drug should be given by personnel handling delivery cases.

DOSAGE FORMS, STRENGTH

Tablet 0.2 mg, Ergometrine maleate 0.5 mg.

RECOMMENDED DOSAGE, DURATION & DIRECTIONS

Adults : 1 Tablet 3 or 4 times a day if bleeding is heavy give 2 tablets.

Directions : In case of child birth and abortion use the drug only after the birth of child and the delivery of placenta.

CONTRAINDICATIONS

During pregnancy, for inducing labour, patients with sepsis or severe infection, severe hypertension, coronary insufficiency, patients having severe liver or kidney damage.

PRECAUTIONS

To be used only after the baby is born and the placenta or after birth has come out. If the patient complains of numbness and tingling discontinue the drug.

ADVERSE EFFECTS

Not seen frequently. Headache, vertigo, tinnitus, abdominal pain, nausea and vomiting may be seen rarely. These do not require discontinuation of treatment.

INTERACTIONS

Adrenatine enhances the vasoconstrictive effect of Ergometrine. The effect of Ergometrine on the uterus is diminished by Halothane.

DIRECTIONS FOR STORAGE

Keep in airtight containers, protect from light and moisture.

INDICATIONS

For Inducing Vomiting

NAME OF THE DRUG

Ipecacuanha

DRUG SUMMARY

Ipecac in small doses acts as an expectorant but when large doses are employed it induces vomiting within 30 minutes of administration of the drug by irritation of the gastrointestinal tract. For the emetic action the drug should be followed with plenty of water. The active principle of Ipecac is emetine.

DOSAGE FORMS, STRENGTH

Syrup of Ipecac USP containing 0.14% emetine ,
Paediatric Ipecacuanha emetine mixture 0.14% emetine
B.P. containing emetine 0.12 to 0.16%

RECOMMENDED DOSAGE, DURATION & DIRECTION

Adults : 1—2 tablespoonful (15—30 ml)

Children : 18m—5 yrs—1 tablespoonful (15 ml)
6 m—18 m—2/3 tablespoonful (10 ml)

Directions : To be taken with a glass of water. If no vomiting occurs within 30 minutes repeat the drug:

CONTRAINDICATIONS

Not to be used in subjects who have swallowed strong acids gasoline or kerosine.

PRECAUTIONS

Not to be used in cases in a state of shock and coma. It should not be given after milk or charcoal. MAKE SURE THAT IT IS NOT IPECAC FLUID EXTRACT WHICH IS 14 TIMES STRONGER.

ADVERSE EFFECTS

Large doses may lead to persistent vomiting and bloody diarrhoea. May lead to ulceration of stomach and intestine. In case vomiting persists give chlorpromazine 25—50 mg intramuscularly.

INTERACTIONS

None worth recording.

DIRECTIONS FOR STORAGE

Store in a cool place in airtight container, protect from light

Cost of Drugs

The unit cost of drugs discussed in this issue are given in the following pages. The products from reputable drug houses have been included and the price of these obtained from the 1983 edition of Indian Pharmaceutical Guide. Cost of pack size most suitable for Primary Health Care only have been included. Every care has been taken to ensure accuracy. Errors and omission, if any, may please be excused.

—EDITOR

Gothone Hospital Association of India
GBCI House, Goldakhsan,
New Delhi-110 021

Generic Names	Presentation	Pack size	Unit cost Rs.
<i>Acetylsalicylic Acid</i>	300 mg tab	1000 tab	25.42
<i>Adrenaline hydrochloride</i>	1 mg/ml ampoules	50 amp.	23.00
<i>Aluminium hydroxide</i>	500 mg tab	1000 tab	34.08
<i>Aminophylline</i>	100 mg tab	1000 tab	45.70
<i>Ampicillin</i>	250 mg cap	1000 tab	875.00
	125 mg/5 ml syrup	40 ml	6.50
<i>Benzoic acid + Salicylic acid</i>	Ointment	500 gm	35.00
<i>Calamine lotion</i>	Lotion	450 ml	13.75
<i>Chlorpheniramine</i>	4 mg tab	1000 tab	15.84
<i>Chlroquine</i>	250 mg tab	1000 tab	262.20
<i>Ergometrine Meleate</i>	0.5 mg tab	1000 tab	390.00
<i>Ferrous sulphate</i>	250 mg tab	1000 tab	13.00
<i>Gentian violet</i>	paint	450 ml	11.50
<i>Iodine</i>	liquid compound	450 gm	27.50
	ointment	25 gm	3.75
	throat paint	400 gm	50.00
<i>Ispagula husk</i>	Isogel	42 gm	2.26

<i>Lindane</i>	Cream 1%	450 gm	28.00
	Lotion 10%	4500 ml	100.00
<i>Benzyl Benzoate</i>	Lotion 25%	1000 ml	32.27
<i>Metronidazole</i>	200 mg tab	500 tab	99.47
<i>Mebendazole</i>	100 mg tab	1000 tab	520.00
<i>Noscapine</i>	25 mg tab	100 tab	12.59
<i>Oral rehydration salt</i>	Sachet for one litre		2.85
<i>Oxyphenonium bromide</i>	5 mg tab	1000 tab	87.86
<i>Paracetamol</i>	500 mg tab	1000 tab	81.00
	120 mg/5 ml suspension	115 ml	7.06
<i>Penicillin</i>	250 mg Pen, V. tablets	10x12 tab.	62.59
	125 mg/5 ml syrup	50 ml	5.45
	Procaine penicillin		
	inj. 4 lac U.	each	1.89
<i>Piperazine</i>	500 mg tab	500 tab	59.91
<i>Promethazine hydrochloride</i>	25 mg tab	1000 tab	80.00
<i>Retinol (Vitamin A)</i>	50,000 I.U. cap	1000 cap	240.00
<i>Salbutamol</i>	4 mg tab	1000 tab	30.00
<i>Senna</i>	7.5 mg tab	500 tab	60.00
<i>Sulphadimidine</i>	500 mg tab	1000 tab	168.60
<i>Tetracycline eye ointment</i>	3.5 mg tube	each	1.09
<i>Trimethoprim</i>	100 mg tab	100 tab	80.00

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DRUGS BULLETIN

OCT. 1983 VOLUME SIX NUMBER FOUR

C O N T E N T S

CORE LIST OF DRUGS	iii
DRUGS FOR PHC (LIST A & B)	viii
THERAPEUTIC INDEX	xi
ALPHABETICAL INDEX	xiii
DESCRIPTION OF DRUGS	1
COST OF DRUGS	74